

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

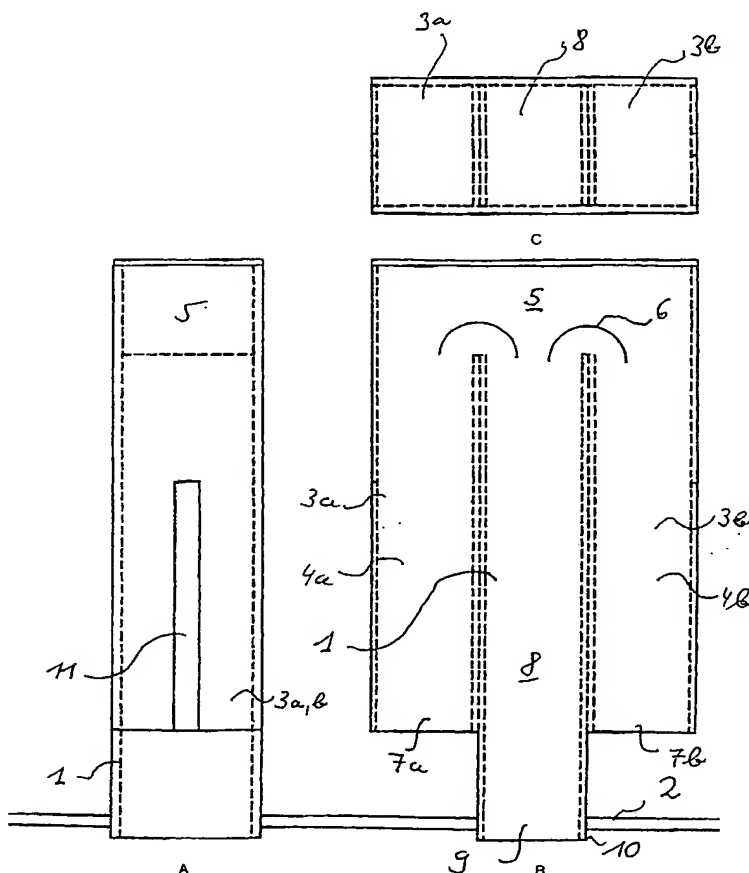
PCT

(10) International Publication Number
WO 2005/068039 A1

- (51) International Patent Classification?: **B01D 3/26**, 3/20, B01J 8/04
- (21) International Application Number: **PCT/EP2004/014485**
- (22) International Filing Date:
20 December 2004 (20.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PA 2004 00040 15 January 2004 (15.01.2004) DK
- (72) Inventor; and
(75) Inventor/Applicant (for US only): **BREIVIK, Rasmus** [DK/DK]; Brødeskovparken 33, DK-3340 Hillerød (DK).
- (74) Common Representative: **HALDOR TOPSØE A/S**; Nymøllevej 55, DK-2800 Kgs. Lyngby (DK).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (71) Applicant (for all designated States except US): **HALDOR TOPSØE A/S** [DK/DK]; Nymøllevej 55, DK-2800 Kgs. Lyngby (DK).
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: VAPOUR-LIQUID DISTRIBUTION TRAY



(57) Abstract: Liquid-vapour distribution device for use in two-phase concurrent down-flow vessels, comprising: a level, horizontal tray being perforated with holes, each perforation through the horizontal tray being fitted with a vapour lift tube, the vapour lift tube consists of at least one elongated up-flow leg and one down-flow leg creating at least one up-flow zone and a down-flow zone between the up-flow zone and down-flow zone, the improvement of which comprises a bluff body being arranged within the transition zone and/or in a region of the up-flow or down-flow zone adjacent to the transition zone of the vapour lift tube.



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

— with amended claims and statement

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report